This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-61 (Canceled).

62 (Currently Amended). A ~~pharmaceutical~~ composition comprising: ~~as active principle~~ a biologically active isolated Tat protein, a fragment thereof or mutant thereof, or a combination thereof, in a non-aggregated and non-oxidized form ~~fragments thereof and/or mutants~~ in combination with a suitable ~~excipients and/or diluents~~ excipient and/or diluent, wherein said Tat protein, ~~fragments and/or mutants~~ fragment or mutant, or combination thereof, 1) ~~enter~~ is internalized by activated endothelial cells or dendritic cells ~~at concentrations~~, which internalization is determined by incubating the activated endothelial cells or the dendritic cells with 10 ng/ml of said Tat protein, fragment or mutant, or combination thereof, which is labeled with rhodamine and detecting the rhodamine in the activated endothelial cells or the dendritic cells by fluorescence microscopy ~~up to 10 nM~~ and 2) ~~perform~~ performs at least one action selected from the group consisting of the following actions: i) ~~activate~~ activates the proliferation, migration and invasion of Kaposi's sarcoma (KS) cells or cytokine-activated endothelial ~~endothelia~~ cells in culture when said Tat protein, fragment or mutant, or combination thereof, is present at a concentration of 10 ng/ml; ii) ~~activate~~ activates virus replication when added to infected cells as measured by a) the rescue of Tat-defective proviruses in HLM-1 cells after the addition of exogenous protein and/or b) the transactivation of HIV-1 gene expression in cells transfected with HIV-1 promoter-reporter plasmid; and iii) ~~induce~~ induces in mice the development of KS-like lesions in the presence of angiogenic factors or inflammatory cytokines.

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Listing of Claims:

1-61 (Canceled).

62 (Currently Amended). A ~~pharmaceutical~~ composition comprising: ~~as active principle~~ a biologically active isolated Tat protein, a fragment thereof or mutant thereof, or a combination thereof, in a non-aggregated and non-oxidized form ~~fragments thereof and/or mutants~~ in combination with a suitable ~~excipients and/or diluents~~ excipient and/or diluent, wherein said Tat protein, ~~fragments and/or mutants~~ fragment or mutant, or combination thereof, 1) ~~enter~~ is internalized by activated endothelial cells or dendritic cells ~~at concentrations~~, which internalization is determined by incubating the activated endothelial cells or the dendritic cells with 10 ng/ml of said Tat protein, fragment or mutant, or combination thereof, which is labeled with rhodamine and detecting the rhodamine in the activated endothelial cells or the dendritic cells by fluorescence microscopy ~~up to 10 nM~~ and 2) ~~perform~~ performs at least one action selected from the group consisting of the following actions: i) ~~activate~~ activates the proliferation, migration and invasion of Kaposi's sarcoma (KS) cells or cytokine-activated endothelial cells in culture when said Tat protein, fragment or mutant, or combination thereof, is present at a concentration of 10 ng/ml; ii) ~~activate~~ activates virus replication when added to infected cells as measured by a) the rescue of Tat-defective proviruses in HLM-1 cells after the addition of exogenous protein and/or b) the transactivation of HIV-1 gene expression in cells transfected with HIV-1 promoter-reporter plasmid; and iii) ~~induce~~ induces in mice the development of KS-like lesions in the presence of angiogenic factors or inflammatory cytokines.

63 (Currently Amended). The ~~pharmaceutical~~ composition according to claim 62, wherein ~~Tat, in its purified, non-aggregated and non-oxidized form,~~ the biologically active isolated Tat protein, fragment or mutant, or combination thereof, is purified ~~lyophilized for storage and resuspended in a biologically acceptable fluid for use~~.

64 (Canceled).

65. (Currently Amended). The ~~pharmaceutical~~ composition according to claim 62, which comprises ~~wherein~~ biologically active isolated wild type Tat protein ~~identified as SEQ. ID. NO 2~~.

66. (Currently Amended.) The ~~pharmaceutical~~ composition according to claim 62, 63 or 65 in a form suitable for administration selected from the group consisting of mucosal, nasal, oral, vaginal, rectal, intramuscular, subcutaneous, intradermal, systemic, and local administration.

67 (canceled).

68. (Currently Amended). The ~~pharmaceutical~~ composition according to claim ~~67~~ 63, wherein said biologically active isolated Tat protein, fragment or mutant thereof, is purified by a method comprising performing heparin affinity chromatography.

69 (Currently Amended). The ~~pharmaceutical~~ composition according to claim 68, wherein said performing ~~purification~~ step is followed by steps of (a) ~~storage~~ lyophilizing ~~of~~ the biologically active isolated Tat protein, fragment or mutant, ~~in lyophilized form~~ and (b) ~~its resuspension~~ resuspending said lyophilized biologically active isolated Tat protein, fragment or mutant, in a degassed buffer.

70-75 (Canceled).

76 (Currently Amended). Biologically active isolated Tat protein, a fragment thereof or mutant ~~fragments thereof and/or mutants~~ thereof, or combination thereof, ~~wherein said biologically active isolated Tat protein, fragments or mutants thereof, or combination thereof~~ which is in a non-aggregated and non-oxidized form and wherein said Tat protein, ~~fragments and/or mutants~~ fragment or mutant, or combination thereof, 1) ~~enter~~ is internalized by activated endothelial cells or dendritic cells ~~at concentrations~~, which internalization is determined by incubating the activated endothelial cells or the dendritic cells with 10 ng/ml of said Tat protein, fragment or mutant, or combination thereof, which is labeled with rhomadine and detecting the rhodamine in the activated endothelial cells or the dendritic cells by fluorescence microscopy ~~up to 10 nM~~ and 2) ~~perform~~ performs at least one action selected from the group consisting of the following actions: i) ~~activate~~ activates the proliferation, migration and invasion of Kaposi's sarcoma (KS) cells or cytokine-activated endothelial ~~endothelia~~ cells in culture when said Tat protein, fragment or mutant, or combination thereof, is present at a concentration of 10 ng/ml; ii) ~~activate~~ activates virus replication when added to infected cells as measured by a) the rescue of Tat-defective proviruses in HLM-1 cells after the addition of exogenous protein and/or b) the transactivation of HIV-1 gene expression in cells transfected with HIV-1 promoter-reporter plasmid; and iii) ~~induce~~ induces in mice the development of KS-like lesions in the presence of angiogenic factors or inflammatory cytokines.

77 (Currently Amended). The biologically active Tat protein, ~~or~~ fragment or mutant, or combination thereof, according to claim 76, ~~wherein Tat, in its~~ which is purified, ~~non-aggregated and non-oxidized form, said biologically active Tat, fragment or mutant thereof, or combination thereof is lyophilized for storage and re-suspended in a biologically acceptable fluid for use~~.

76 (Currently Amended). Biologically active isolated Tat protein, a fragment thereof or mutant ~~fragments thereof and/or mutants~~ thereof, or combination thereof, ~~wherein said biologically active isolated Tat protein, fragments or mutants thereof, or combination thereof~~ which is in a non-aggregated and non-oxidized form and wherein said Tat protein, ~~fragments and/or mutants~~ fragment or mutant, or combination thereof, 1) ~~enter~~ is internalized by activated endothelial cells or dendritic cells ~~at concentrations~~, which internalization is determined by incubating the activated endothelial cells or the dendritic cells with 10 ng/ml of said Tat protein, fragment or mutant, or combination thereof, which is labeled with rhomadine and detecting the rhodamine in the activated endothelial cells or the dendritic cells by fluorescence microscopy ~~up to 10 nM~~ and 2) ~~perform~~ performs at least one action selected from the group consisting of the following actions: i) ~~activate~~ activates the proliferation, migration and invasion of Kaposi's sarcoma (KS) cells or cytokine-activated endothelial cells in culture when said Tat protein, fragment or mutant, or combination thereof, is present at a concentration of 10 ng/ml; ii) ~~activate~~ activates virus replication when added to infected cells as measured by a) the rescue of Tat-defective proviruses in HLM-1 cells after the addition of exogenous protein and/or b) the transactivation of HIV-1 gene expression in cells transfected with HIV-1 promoter-reporter plasmid; and iii) ~~induce~~ induces in mice the development of KS-like lesions in the presence of angiogenic factors or inflammatory cytokines.

77 (Currently Amended). The biologically active Tat protein, ~~or~~ fragment or mutant, or combination thereof, according to claim 76, ~~wherein Tat, in its~~ which is purified, ~~non-aggregated and non-oxidized form, said biologically active Tat, fragment or mutant thereof, or combination thereof is lyophilized for storage and re-suspended in a biologically acceptable fluid for use~~.

78 (Canceled).

79 (Currently Amended). The biologically active isolated Tat protein, fragment or mutant, or combination thereof, according to claim 76, which is biologically active isolated wild type Tat protein ~~wherein Tat has the sequence identified as SEQ. ID. NO. 2~~.

80-88 (Canceled).

89 (New). The composition of claim 62, 63 or 65 which further comprises a biologically acceptable fluid.

90 (New). A lyophilized form of the composition of claim 62, 63 or 65.

91 (New). A product which is produced by a process of lyophilizing the composition of claim 62, 63 or 65 and resuspending the lyophilized composition in a biologically acceptable fluid.

92 (New). The composition of claim 65 wherein the amino acid sequence of said biologically active isolated wild type Tat protein consists of SEQ ID. No. 2.

93 (New). The composition of claim 89 wherein the biologically acceptable fluid is serum, plasma, or one or more fractions thereof.

94 (New) The composition of claim 91 wherein the biologically acceptable fluid is serum, plasma, or one or more fractions thereof.

95 (New). The composition of claim 62, 63, 65, or 69 which further comprises an adjuvant.

96 (New). The composition of claim 95 which further comprises a biologically acceptable fluid.

97 (New). The composition of claim 95 wherein the adjuvant is RIBI, alum, or ISCOM, or a combination thereof.

98 (New). The composition of claim 62, 63 or 65 in which said biologically active isolated Tat protein, fragment or mutant, or combination thereof, is bound to a delivery vehicle.

99 (New). The composition of claim 98 in which said delivery vehicle is a nanoparticle.

100 (New). The composition of claim 98 in which said delivery vehicle is an autologous erythrocyte.

101 (New). The composition of claim 66 which is formulated for systemic delivery.

102 (New). The composition of claim 66 which is formulated for intradermal delivery.

103 (New). The composition of claim 66 which is formulated for subcutaneous delivery.

104 (New). The composition of claim 103 which further comprises Alum.

105 (New). The composition of claim 66 which is formulated for mucosal delivery.

106 (New). The composition of claim 95 which is in a form suitable for administration selected from the group consisting of mucosal, nasal, oral, vaginal, rectal, intramuscular, subcutaneous, intradermal, systemic, and local administration.

107 (New). The composition of claim 106 which is formulated for systemic delivery.

108 (New). The composition of claim 106 which is formulated for intradermal delivery.

109 (New). The composition of claim 106 which is formulated for subcutaenous delivery.

110 (New). The composition of claim 109 which further comprises Alum.

111 (New). The composition of claim 106 which is formulated for mucosal delivery.

112 (New). The composition of claims 62, 63, 65, or 69, in which said biologically active isolated Tat protein, fragment or mutant, or combination thereof, is conjugated to a T-helper peptide or T-helper universal epitope of Tetanus Toxoid.

113 (New). The composition of claims 62, 63, 65, or 69, which further comprises an HIV antigen from an HIV protein other than a Tat protein.

114 (New). The composition of claim 113, in which said HIV antigen is rev, nef or gag, or an immunogenic fragment thereof.

115 (New). The composition of claims 62, 63, 65, or 69, which further comprises an immuno-modulant molecule.

116 (New). The composition of claim 115, in which said immuno-modulant molecule is a cytokine.

117 (New). The composition of claim 116, in which said cytokine is IL-12 or IL-15.

118 (New). The composition of claims 62, 63, 65, or 69, in which said biologically active isolated Tat protein, mutant or fragment is fused to an HIV antigen from an HIV protein other than a Tat protein.

119 (New). The composition of claim 118, in which said HIV antigen is rev, nef or gag, or an immunogenic fragment thereof.

120 (New). The composition of claims 62, 63, 65, or 69, in which said biologically active isolated Tat protein, mutant or fragment is fused to an immuno-modulant protein.

121 (New). The composition of claim 120, in which said immuno-modulant protein is a cytokine.

122 (New). The composition of claim 121, in which said cytokine is IL-12 or IL-15.

123 (New). The composition of claim 62, 63, 65, or 69, which further comprises an inhibitor of viral replication.

124 (New). The composition of claim 62, 63, or 69, which comprises a biologically active isolated mutant Tat protein.

125 (New). The composition of claim 124, wherein the amino acid sequence of said biologically active isolated mutant Tat protein consists of SEQ ID NO. 7, 8, 9, or 10.

126 (New). The composition of claim 125, wherein the amino acid sequence of said biologically active isolated mutant Tat protein consists of SEQ ID NO. 7.

127 (New). The composition of claim 62, 63, or 69, which comprises a biologically active isolated fragment of a Tat protein.

128 (New). The composition of claim 127 wherein the amino acid sequence of said biologically active isolated fragment consists of SEQ ID NO. 11, 12, 13, 14, 15, 16, or 17.

129 (New). The biologically active isolated Tat protein or mutant or fragment thereof of claim 79 wherein the amino acid sequence of said wild type Tat protein consists of SEQ ID NO. 2.

130 (New). The biologically active isolated Tat protein or mutant or fragment thereof of claim 76, which is a biologically active isolated mutant Tat protein.

131 (New). The biologically active isolated Tat protein or mutant or fragment thereof of claim 130, wherein the amino acid sequence consists of SEQ ID NO. 7, 8, 9, or 10.

132 (New). The biologically active isolated Tat protein mutant or fragment thereof of claim 131, wherein the amino acid sequence of said biologically active isolated mutant Tat protein consists of SEQ ID NO. 7.

133 (New). The biologically active isolated Tat protein or mutant or fragment thereof of claim 76, which is a biologically active isolated fragment of a Tat protein.

134 (New). The biologically active isolated Tat protein or mutant or fragment thereof of claim 133, wherein the amino acid sequence of said biologically active isolated fragment consists of SEQ ID NO. 11, 12, 13, 14, 15, 16, or 17.

135 (New). The biologically active isolated Tat protein or mutant or fragment thereof of claim 76, which is fused to an HIV antigen from an HIV protein other than a Tat protein.

136 (New). The biologically active isolated Tat protein or mutant or fragment thereof of claim 135, in which said HIV antigen is rev, nef or gag, or an immunogenic fragment thereof.

137 (New). The biologically active isolated Tat protein or mutant or fragment thereof of claim 76, which is fused to an immuno-modulant protein.

138 (New). The biologically active isolated Tat protein or mutant or fragment thereof of claim 137, in which said immuno-modulant protein is a cytokine.

139 (New). The biologically active isolated Tat protein or mutant or fragment thereof of claim 138, in which said cytokine is IL-12 or IL-15.